

California Air Resources Board

Work Program for U.S. EPA 105 Grant

Air Resources Board Program Overview

INTRODUCTION

The California Air Resources Board (ARB) is the State agency responsible for protecting public health and the environment from the harmful effects of air pollution. ARB has 11 Governor-appointed board members and about 1,200 staff in nine divisions.

ARB oversees all air pollution control efforts in California, including the activities of 35 independent local air districts. State law vests ARB with direct authority to regulate pollution from motor vehicles, fuels, and consumer products. Primary responsibility for controlling pollution from business and industry lies with the local air districts. The federal government retains the exclusive authority to regulate interstate trucks registered outside California, certain new farm and construction equipment, new locomotives, ships, and aircraft. ARB works in cooperation with the districts and the U.S. Environmental Protection Agency (U.S. EPA) on strategies to attain State and federal ambient air quality standards and reduce air toxics emissions.

The scientific backbone of California's air quality programs is ARB's research and technical work on the causes, effects, and methods for control of air pollution. Extensive health effects studies assess whether ARB's current programs adequately protect the health of all Californians and enable the identification of pollutants of most concern. California's air monitoring network, emission inventory, and atmospheric modeling capability are the most extensive in the nation. This scientific foundation provides the information needed to pursue effective strategies to cut air emissions and reduce health impacts from air pollution.

ARB's regulatory and other programs continue to set the standard for innovative and effective air pollution mitigation in California and on both national and worldwide fronts. However, these programs can only achieve their projected benefits if they are properly and consistently implemented. ARB's enforcement program incorporates both a compliance foundation, through industry training programs and compliance assistance materials that provide regulated industries with the opportunity to learn and understand how to comply with regulations, and an enforcement arm that brings violators to justice, effectively creating an incentive to comply.

Outreach and cooperative efforts with community, industry, academic, and governmental stakeholders are critical to achieving ARB's goals: community members help identify priorities and address local concerns; businesses assist in identifying feasible and cost-effective controls with reasonable implementation timeframes; and academic institutions provide the scientific information that underpin the programs.

Other government agencies cooperate on issues that fall under their jurisdiction. These partnerships help ARB meet California's clean air quality goals.

California's residents, businesses, and agencies have made tremendous progress in improving air quality. In the Los Angeles area, peak ozone concentrations declined by 50 percent from 1985 to 2004, while average levels of inhaleable particulate matter (PM10) fell by about 20 percent from 1990 to 2005.

The number of unhealthy days has improved considerably across the State, down by almost 55 percent from 1985 to 2005 in Los Angeles. The decline in health risk from air toxics, like benzene and lead, has been equally dramatic. Despite this progress, over 90 percent of Californians still live in areas with air that is unhealthy at times.

ARB programs reflect a commitment to clean air and a healthier future for all Californians. Specific actions to achieve priorities are described in State Implementation Plans and other documents such as the Diesel Risk Reduction Plan, Emission Reduction Plan for Ports and International Goods Movement, and the Environmental Justice Action Plan.

MISSION STATEMENT

To promote and protect the public health, welfare, and ecological resources through the effective and efficient reduction of air pollutants, while recognizing and considering the effects on the economy of the State.

PRIMARY WORK STATEMENT

Developing and implementing new strategies to effectively reduce air pollution emissions on a local, regional, statewide, and global level by:

- **Adopting and implementing new strategies to cut ozone, particulate matter, and air toxics from all sources.**

ARB develops and implements technology-advancing, cost-effective emission reduction measures for all sources under its authority including cars and trucks, off-road equipment, recreational vehicles, fuels and fueling operations and consumer products. Reducing particulate matter from diesel engines is the highest priority for the air toxics program. To further cut personal exposure, ARB examines ways to address indoor air pollution.

- **Adopting and implementing measures to reduce the risk from exposure to particulate matter from diesel engines 75 percent by 2010 and 85 percent by 2020.**

ARB reduces particulate matter from diesel engines through programs that require engine retrofits and cleaner fuels, as well as programs that offer financial

incentives to accelerate turnover of older, dirtier engines. As part of these programs, ARB is currently developing a regulation that will reduce PM emissions from on-road heavy duty diesel trucks that operate in California.

- **Continuing Implementation of the Goods Movement Emission Reduction Plan.**

ARB implements its 2006 Emission Reduction Plan for Ports and Goods Movement that identifies and initiates specific actions necessary to reduce goods movement-related emissions and protect public health. The basic strategies include regulatory actions, incentive programs, lease agreements, careful land use decisions, and voluntary actions. The measures address all significant emission sources associated with the rapidly expanding international and domestic goods movement including trucks, locomotives, marine vessels, harbor craft, and cargo handling equipment. ARB is implementing or developing regulations for port and other trucks, transportation refrigeration units and auxiliary power units, ship fuels and ships at dock, locomotive fuel, harbor craft, and cargo handling equipment. ARB is also providing incentives for cleaner freight technology through the \$1 billion Proposition 1B Goods Movement Emission Reduction Program to achieve early or extra emission reductions. These measures and incentives have been incorporated into California's 8-hour ozone and PM_{2.5} SIPs for regions where additional reductions are needed.

ARB also conducts health risk assessments for major seaports and rail yards in California, and works with ports, railroads, and air districts to reduce the localized health risk. ARB coordinates with federal agencies that have authority for some of these emission categories to advocate for more effective national and international standards.

- **Adopting and implementing measures to reduce greenhouse gas emissions.**

ARB is the lead agency for the implementation of AB 32, the California Global Warming Solutions Act of 2006. In this capacity, ARB must develop greenhouse gas emission inventories, set a 2020 target for emission reductions, identify and adopt early action measures to obtain near-term reductions, develop and adopt a Scoping Plan that lays out California's overall strategy to reduce greenhouse gases, and adopt the regulations to implement the Scoping Plan. ARB will also be responsible for tracking the implementation of the Scoping Plan to ensure that the State stays on track. Both the Scoping Plan and the greenhouse gas reduction measures will cover a broad range of emission sources such as transportation, electricity generation and other large sources, residential and commercial users, agriculture, landfills, and other industrial sectors.

ARB is part of a multi-agency Climate Action Team that identifies the actions California can take to meet the targets set for 2010, 2020, and 2055 for reducing

greenhouse gases. The Climate Action Team also submits reports every two years on progress in meeting the targets; the reports include scientific analysis of climate change impacts on the State and the measures that can be taken to best respond to the adverse consequences of climate change.

- **Meeting obligations under the federal Clean Air Act.**

ARB works with local and federal partners to develop State Implementation Plans for ozone and particulate matter in California non-attainment areas in response to U.S. EPA's promulgation of the new national eight-hour ozone standard and the fine particulate matter (PM_{2.5}) standards.

- **Promoting the development, commercialization, and use of zero- and near-zero emission technologies.**

ARB is taking the initial steps in the development of a hydrogen transportation system that is a bridge to a cleaner, more secure, and more sustainable transportation and energy future. ARB recognizes that the development, commercialization, and the use of zero- and near-zero emission technologies is critical for achieving and maintaining federal and State air quality standards.

- **Demonstrating the viability and promoting the commercialization of fuel cells in many applications.**

ARB is a member of the California Fuel Cell Partnership, a pathbreaking collaboration of auto companies, fuel providers, fuel cell technology companies, and government agencies that is placing fuel cell electric vehicles on the road in California. ARB's role in the partnership includes support of zero emission bus demonstrations, development of fueling codes and standards, development of infrastructure deployment, and education and outreach.

- **Participating in the implementation of the California Hydrogen Highway Network Action Plan.**

ARB works to achieve the goal of the California Hydrogen Highway Network Initiative of supporting and catalyzing a rapid transition to a clean hydrogen transportation economy in California that has promise for providing a cleaner, more secure and more sustainable transportation and energy future. ARB is working to establish several hydrogen fueling station demonstration projects and acquire a diverse fleet of hydrogen vehicles for use in State fleets and university or airport shuttle services.

- **Coordinating environmental justice efforts with Cal/EPA.**

ARB participates in Cal/EPA's Children's Environmental Risk Reduction Plan (ChERRP), which consists of the development of cumulative impact analysis tools and community-driven pilot projects. The pilot projects explore innovative strategies to reduce environmental health risks to children. ChERRP is a

collaborative effort with community members; other Cal/EPA Boards, Offices, and Departments; local agencies; businesses; and other interested stakeholders, and is focused on several communities in Southern California.

SUPPORTING WORK ELEMENTS

Improving the scientific understanding of the relationship between air pollution and health effects by:

- **Understanding the relationship between air pollution and health effects.**

ARB evaluates and establishes clean air targets that protect the health of all Californians, including sensitive individuals and those living in areas with environmental justice concerns, and the State's sensitive ecosystems.

- **Characterizing air pollution exposure.**

ARB advances its understanding of human exposure to air pollution by characterizing personal exposure to pollutants from both indoor and outdoor sources. This allows ARB to focus regulatory activities on those pollutants that represent the greatest health concerns.

- **Developing an understanding of the sources of global air pollution and its impacts on the environment.**

ARB is working to better understand the effects of changes in the global climate due to increases in carbon dioxide and other greenhouse gases. ARB also identifies the research needed to determine the impact of these changes on regional air quality and, in turn, on existing and future control strategies. In addition, a more quantitative understanding of the sources of global climate change is needed before effective mitigation methods can be determined and assessed.

Improving technical tools to assess the nature and sources of air pollution, and evaluating the effectiveness of air quality improvement strategies by:

- **Developing the atmospheric modeling capability needed to support attainment demonstrations for the State ozone standard.**

ARB and U.S. EPA work together to plan and carry out the work necessary to ensure that the air quality modeling needed to develop plans for attaining federal and State ozone standards is based on the best science possible.

- **Refining the current understanding of particulate matter pollution.**

ARB works to have a science-based understanding of the nature of the particulate matter problem, the relative contribution of pollution sources, and how the problem varies by area.

- **Developing new tools to provide air quality information to the public.**

ARB staff develops community based internet tools that provide air quality and emissions information to the public in an easy to use format.

- **Promoting the advancement of air pollution equipment technology.**

ARB enhances emission monitoring and measurement methods through its research program.

- **Improving understanding of the multimedia ecological effects of air pollution.**

ARB works to better understand the ecological and multimedia effects of air pollutants on California's natural environment through research to improve the scientific understanding of the relationship between air pollution and ecological effects. Past studies indicate that air pollution deposition damages native pine forests and other ecosystems, contributes to crop injury throughout the State, and poses a threat to aquatic ecosystems and water quality.

- **Assessing and improving air quality in the California-Mexico border region.**

ARB works cooperatively with U.S. and Mexican environmental agencies to build the foundation for successful air quality management strategies for the California-Mexico border region. ARB operates air monitoring stations in Baja California and compiles air quality data and emission inventories for the cities of Mexicali and Tijuana.

ARB renewed its commitment to protect the environment and public health in the border region through work on the Border 2012 Program, a 10 year environmental plan developed by Mexico and the United States.

Ensuring regulatory programs achieve the necessary emission reductions through compliance assistance paired with aggressive, firm, and fair enforcement:

- **Broadening ARB's mobile source enforcement program to address newly targeted sources and tackle emerging and expanding pathways of commerce.**

ARB designs and implements new compliance/enforcement strategies to ensure the effective implementation of new regulations such as those that limit heavy-duty diesel vehicle idling, and reduce emissions from solid waste collection vehicles, and minimize emissions from California's shipping ports and rail yards.

- **Coordinating multimedia inspections and investigations with other Cal/EPA agencies.**

ARB works with other law enforcement agencies (including environmental, police, customs and immigration, and the U. S. Coast Guard) to establish a strong enforcement presence statewide to address all manner of transportation violations.

- **Strengthening and fine-tuning enforcement efforts in the fuels, consumer products, cargo tanks, asbestos abatement, and other non-mobile source programs.**

ARB is expanding its enforcement program to address several new emission areas— including incineration practices on cruise ships, locomotive idling, and fuels used by ships while in and around the ports.

- **Supporting efforts to improve local air district enforcement and permitting programs.**

ARB provides an oversight role to the air districts by offering assistance and training to district inspection staff, providing enforcement compliance program evaluations, and additional source inspections and testing.

Please see Attachment A for specific work plan products.